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# Perception and Satisfaction Level of Remote Login Access Users: A Study

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**Abstract**
The library is a knowledge center where all the resources, regardless of print and e-resources are made available to the user. E-resources are the backbone of any digital library in this information superfluous era. Most of the modern library users are referring e-resources for their learning, teaching and research activities. Remote login access to e-resources is the best practice of any library which helps the users to access their desired information wherever they stay without wasting time. It gives an opportunity for the best use of the e-resources and offers easy access to various resources of the library through its interface from anywhere. In this study, an attempt has been made to understand the perception of users of the remote access facility provided by the Health Sciences Library, Kasturba Medical College, Manipal Academy of Higher Education, Manipal. The main aim of the study is to determine the satisfaction level of users about the remote access facility provided by the library. A questionnaire-based survey was conducted. Questionnaires were sent to 187 registered users of remote access service of the library. The study has identified the various benefits of remote access facility and the problems faced by the registered users to access subscribed e-resources remotely. After the investigation, the study suggested some important points for consideration.

## 1. INTRODUCTION

The library is a knowledge center where all the resources regardless of print and e-resources are made available. E-resources are the backbone of any digital library in this information superfluous era. Due to the technological development, users' information requirements are becoming more specialized. Library users are keen in searching and retrieving information stored/viewed from a distance or stored in remote locations. Library professionals with the support from computer experts made this technology easy with remote command line and scripts to retrieve from remote computers. Remote access is just what it sounds like - the ability to access user computer from a remote location. A library can't hold a stock of the resources if it does not makes it available to the users. Remote login access to e-resources is the best practice of any library. It gives an opportunity for the best use of the e-resources and offers easy access to various resources of the library through its interface from anywhere. Usually, in any library, access to subscribed e-resources is made available on user name and password or IP ranges/intranet environment which is limited to users staying inside the campus. Providing remote or off-campus access to e-resources among user community wherever they reside is the need of the hour for the users of the library. Now, providing remote access service facility is one of the objectives of any modern library and is the best way of maximizing the use of the library e-resources.

## 2. REVIEW OF LITERATURE

History has strong evidence that people are keen in searching and retrieving information stored/viewed from a distance and when continuing this gist in the modern era, people are more concerned about finding methods to get access to digital objects stored in remote locations. Computer experts made this technology easy with remote command line and scripts to retrieve from remote computers. In early days of computers, software utilities for UNIX-like have also packed some command line programs like rlogin, telnet, rsh, etc. to enable remote access to networked computers. These commands give some control on the remote machine, and the logged-in user can establish a remote connection from the local terminal to a remote machine.

Mahabaleshwara Rao et al. (2014)[1] have explained the implementation of off-campus access facility in the library with its benefits, conditionality for access and technical details. As the Health Sciences Library was subscribing to diverse sets of electronic information resources for its users, there was a pressing demand from the user community for off/remote campus access to the subscribed e-resources, and hence initiated the search for an appropriate off-campus login access solution. It identified EZproxy remote access software as the solution. Details of the various remote access software available for installation to access the e-resources, their advantages and terms and conditions have also been included in their paper.

Chris White and JenniferAcker[2] in their article explained about remote authentication, advantages of remote authentication, benefits of remote authentication with EZproxy, getting ready for implementation, ten easy steps of implementation, issues encountered, etc.

Peg Lawrence (2009)[3] in his paper highlighted off-campus access to subscribed e-resources of the library for users using EZproxy too and how better library can give remote users to access e-content subscribed by the library. He also explained the methodology of implementation of software and choosing EZproxy as Proxy Server. And he explained what is the troubleshooting for remote users.

Denise Troll Covey (2003)[4] in his research reveals that academic libraries are not meeting user needs and expectations for easy access to online resources. He found in his research that remote users are particularly dissatisfied. Survey results indicate that the technologies currently deployed to support off-campus users are inadequate and problematic for both users and libraries. A new approach is required to improve service quality.

Barry Schouten and Marc Cigrang (2003)[5] in their paper discussed remote access systems for statistical analysis of microdata. They discussed the characteristics, limitations and desired properties of a remote system. They illustrated the system at LIS (Luxembourg Income Study)/LES (Luxembourg Employment Study).

The McGill Library[6] website is having Off-campus access to e-resources using EZproxy server and virtual private network (VPN). The users of McGill library could also access the electronic resources through the library website, WorldCat Local, or through the "McGill Library Full Text." But the user should login before they access the e-resources. McGill alumni could also access e-resources from off campus. Before accessing the e-resources, they should register with the McGill Alumni Online Community. This is the special service of McGill library.

Duke University Libraries[7] website explained about off- campus access to subscribed e-resources. It is providing off-campus access to many databases and e-journals for students, faculty, and staff. This library provides the off-campus access facility through the Internet using Duke's NETID, via Duke's VPN and using the Browzine app to access academic journals using tablet through Duke Libraries.

IALS and SAS, University of London[8] students, fellows, staff and some of the library users are able to access electronic resources from outside the Library, logging in using details from their current IALS Library card or SASCARD. Users are not given separate username and password for off-site access to e-resources. Users should enter the username and barcode number of current IALS Library card or SASCARD to access resources of the library.

Liana Irawan and others[9] explained about the remote access, various methods of remote access, installation methods and how to manage the network server.

L.A. Kanal and others[10] in their article briefly describes the implementation of HOoA (Home, Office or Anywhere) RAS (Remote Access Services) for Elsevier e-resources and also discusses the various technologies and tools for remote access like EZproxy, Shibboleth, REmoteX provided by various publishers and aggregators. It covers topics like how RAS works,

its benefits to patrons and various technical issues involved like feasibility, implementation, and management of such technologies.

Indian Institute of Management Kozhikode[11] offers web-based service for off-campus library online access. All registered users are matriculated in the remote login server. The user who wants to get remote access to the Library/Intranet has to use URL of the remote access server of the IIMK website. The IIMK institution username for remote access service set as institution email ID. Usage of the remote access facility involves IIMK's network security issues.

The University Library of Washington[12] website exposes the off-campus facility to access e-resources. Most of the databases, e-journals, e-books are restricted to UW faculty, students and staff. If the user wants to access restricted resources of the library, they should login through UW Net ID. So for this purpose, the UW institution recommends to the users to install the off-campus access (proxy) bookmarklet on own browser's bookmarks toolbar. The bookmarklet lets users log into the proxy without having to browse through the libraries website.

University of Southern California[13] (USC) Library website page describes various methods to access restricted content. This University provides off-campus facility to access e-resources through a proxy server and VPN (Virtual Private Network). And for on-campus access provide wired and wireless connections. Shibboleth software is being used for access through VPN network. If the user is facing any problem with using a proxy server at that time the webpage provides links to troubleshooting tips.

University of Applied Social Sciences[14] serves the off-site access of e-resources facility to access subscribed e-resources of the library through EZproxy. In this library, the login process of the EZproxy user have to enter e-catalogue ID using Zero (0) and personal code, and for a password, the user has to enter last 4 digits of his or her personal code.

## 3. NEED FOR THE STUDY

Health Sciences Library of Kasturba Medical College, Manipal Academy of Higher Education, Manipal, perhaps the best among all Health Sciences Libraries in India. The state of the art library stretching over 1.5 lakh square feet, on five levels is a domain for information seekers; be it students, faculty or researchers. It has the capacity to accommodate 1300 students at a time. Besides the comfortable seating and reading environment, the library is well equipped with modern facilities such as access to internet and web resources including online journals and e-books. The library is providing a growing range of databases on the campus network. Access to e-resources subscribed by the library has also been provided for off-campus users. The Library has provided 'EBSCO Discover Service (EDS) - Single Window Search' tool to find relevant/required information across all library subscribed resources along with open access resources using the single search box. All the library services have been automated on modern line. The library has fully computerized its collection, which could be accessible through OPAC. The library is enabled with Wi-Fi technology and security systems with Closed Circuit Television System (CCTV). There is a separate audio-visual room, computer lab, group study area and private study area in the library. The library has all the facilities for the students to learn. The Health Sciences Library is committed to providing a world-class information support to its users[15].

Fig. 1: KMC Health Sciences Library

Table 1 depicts a total collection of the library resources as on 30th June 2017 and Table 2 depicts a list of online databases subscribed by the KMC Health Sciences Library.

Table 1: Total Collection of the Library

| Collection | Total |
|---|---|
| Books | 64167 |
| Journals subscribed for the year 2017 | 1916 |
| Online databases | 13 |
| Online journals | 6028 |
| e-Books | 12779 |
| Back volumes of journals | 38996 |
| CDs | 885 |
| Postgraduate Dissertations | 6810 |
| Ph.D. Theses | 925 |

Table 2: Online Databases Subscribed by the Library

| Names of the Online Databases |
|---|
| • AccessMedicine |
| • AdisInsight |
| • CINAHL Plus with Full Text |
| • ClinicalKey |
| • DynaMed |
| • Journal Citation Reports (JCR) |
| • ProQuest Health and Medical Complete |
| • SciFinder |
| • SciVal |
| • Scopus |
| • Springer Link |
| • UpToDate |
| • Web of Science |

The KMC Health Sciences Library, Manipal Academy of Higher Education, Manipal made available subscribed e-resources to its users through intranet before the implementation of remote access facility. The technical division of KMC Health Sciences Library selected EZproxy remote software from among a number of remote access software available in the market viz., CC Proxy, Squid Proxy, RHN proxy, due to the compatibility of the software with the existing computer and other infrastructure of the KMC Health Sciences Library. EZproxy implemented at the KMC Health Sciences Library in the month of November 2013.

According to the objectives of the present study, it is very much essential to know the opinion, satisfaction level and problems of the users, who use remote access facility of the KMC

Health Sciences Library. Further, it is essential to understand whether a user wants any modifications or shifts in the remote access facility or facing any problem while accessing library resources remotely. Therefore a study is needed:

- To identify the user's requirement for any modification or changes in the remote access facility provided by the library
- To know the reason or purpose for using remote access facility by the users
- To know whether users are facing any problem while accessing subscribed e-resources remotely
- To understand the benefits obtained by the users from the remote access facility

## 4. STATEMENT OF THE PROBLEM
The problem is entitled as "Perception and Satisfaction Level of Remote Login Access Users: A Study."

## 5. OBJECTIVES OF THE STUDY
The study held the following objectives:

- To understand perception of users on remote login access facility provided by the KMC Health Sciences Library, Manipal Academy of Higher Education, Manipal to access subscribed e-resources
- To know the level of satisfaction of the users of remote access facility

## 6. SCOPE OF THE STUDY
The library has provided remote access facility to the faculty members, postgraduate students and researchers of the health sciences institutions of Manipal Academy of Higher Education, Manipal. Keeping in view the enormity of the task, the scope of this study is limited to cover the registered users of remote access facility at the KMC Health Sciences Library, Manipal Academy of Higher Education, Manipal.

## 7. METHODOLOGY
A questionnaire survey was carried out to collect the data to understand the perception of remote access users. A structured questionnaires were distributed among the registered users of remote access facility of the KMC Health Sciences Library. "Google Drive" tool facility was used to design the questionnaire. The questionnaires were mailed to the registered users of remote access facility. Out of 258 registered users, e-mail addresses were available for 220 registered users. A total of 220 questionnaires were distributed to collect the primary data, out of which 187 registered users had received the questionnaires and 33 users' e-mails were bounced back. Among the 187 questionnaires received back only 76 were usable questionnaires making a moderate response rate of 40.64% which was found adequate for the analysis.

Table 3: Distribution of Questionnaire

| Total registered users of remote access facility | Total registered users email addresses available | Total No. of questionnaire sent via email to the registered users | Total No. of emails bounced back | Total No. of registered users received the questionnaire | Total No. of registered users returned filled in questionnaire and usable |
|---|---|---|---|---|---|
| 258 | 220 | 220 | 33 | 187 | 76 |

## 8. ANALYSIS OF DATA

### 8.1 Survey Population

The total study population consisted of registered 187 users of remote access facility at the KMC Health Sciences Library. The percentage of response was 40.64% (76).

Table 4: Distribution of Questionnaire

| Questionnaires distributed | Response received | Percentage |
|---|---|---|
| 187 | 76 | 40.64% |

### 8.2 Gender-wise Distribution

The Table 5 depicts that majority of the respondents were male (60.53%) where in 39.47% were females.

Table 5: Gender-wise Distribution of Questionnaire

| Gender | Numbers | Percentage |
|---|---|---|
| Male | 46 | 60.53% |
| Female | 30 | 39.47% |
| **Total** | **76** | **100%** |

### 8.3 Position-wise Response

A question was asked to the registered users of remote access facility in KMC Health Sciences Library, Manipal to disclose their present position. The respondents were stratified into three positions as faculty members, researchers and postgraduate students who were the target population of this study. The position standings of those in the sample were 52 (68.42%) faculty members, 6 (7.89%) researchers and 18 (23.68%) postgraduate students. In comparing the sample to the population of interest, faculty members were clearly over represented (Table 6).

Table 6: Category-wise Response

| Position | Numbers | Percentage |
|---|---|---|
| Faculty members | 52 | 68.42% |
| Researchers | 6 | 7.89% |
| Postgraduate students | 18 | 23.68% |
| **Total** | **76** | **100%** |

## 8.4 Awareness about Remote Access Facility

Data presented in Fig. 2 indicates that 100% (76) of respondents were aware of remote access facility provided by the KMC Health Sciences Library.
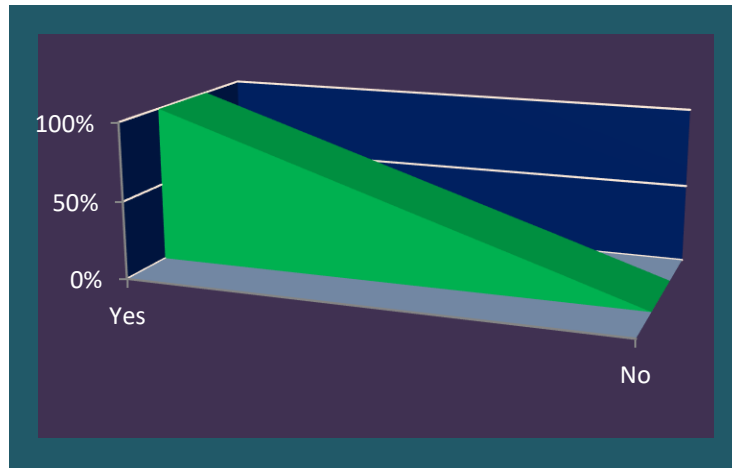


Fig. 2: Awareness of Remote Access Facility

## 8.5 Sources for Awareness of Remote Access Facility

In this study, a question was asked to understand the users' response on how they were aware of the availability of remote access facility at the KMC Health Sciences Library. The Table 7 shows that majority of the respondents (40.79%) were aware of remote access facility through library website whereas 35.53% and 19.74% of users are aware of the same through their colleagues and departments respectively.

Table 7: Sources for Awareness of Remote Access Facility

| Sources | Respondents | Percentage |
|---|---|---|
| Through Library website | 31 | 40.79% |
| Colleagues | 27 | 35.53% |
| Departments | 15 | 19.74% |
| Others | 6 | 7.89% |

*Note:     Respondents could tick mark more than one source*

## 8.6 Using of Remote Access Facility

Data presented in Table 8 indicates the percentage of users started using the remote access facility at a different time period. The majority of respondents (64.47%) were started using remote access facility from more than one year whereas 21.05% of users started using remote access facility recently.

Table 8: Using of Remote Access Facility

| Frequency | Respondents | Percentage |
|---|---|---|
| Recently | 16 | 21.05% |

| | | |
|---|---|---|
| More than a year | 49 | 64.47% |
| Less than a year | 11 | 14.47% |
| **Total** | **76** | **100%** |

## 8.7 Satisfaction Level of Remote Access Facility

Figure 3 indicates the level of satisfaction with remote access facility which is provided by KMC Health Sciences Library. The study indicates that majority of users i.e. 37.1% are highly satisfied with remote access facility, 51.4% of users satisfied with remote access facility and 11.4% of users are uncertain with remote access facility.
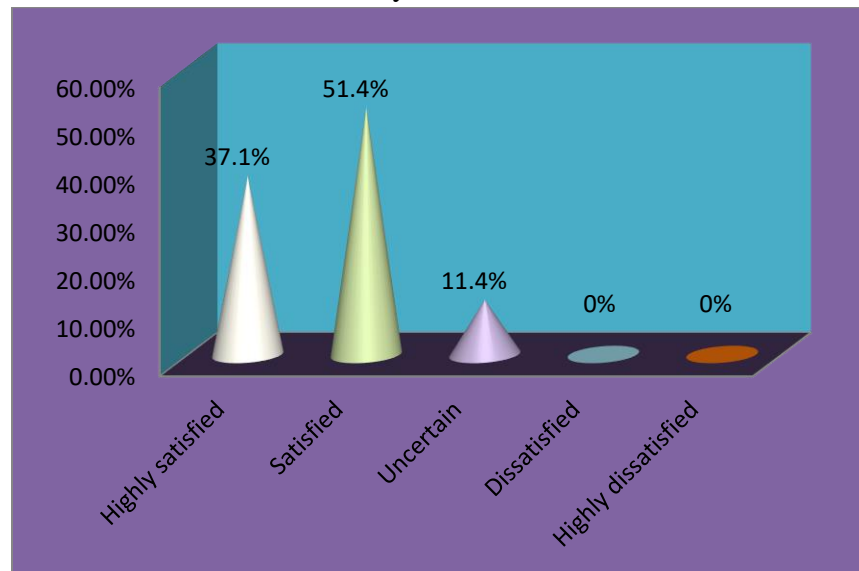


Fig. 3: Satisfaction level of Remote Access Facility

## 8.8 Rating of Remote Access Facility

The question was asked to rate the usefulness of remote access facility of the library. In this study 59.21% (45) of the respondents have mentioned that remote access facility is highly useful, 34.21% (26) of users felt it is useful, and 6.58% (5) of users were uncertain about the usefulness of the remote access facility provided by KMC Health Sciences Library.

Table 9: Rating of Remote Access Facility

| Rating | Respondents | Percentage |
|---|---|---|
| Highly useful | 45 | 59.21% |
| Useful | 26 | 34.21% |
| Uncertain | 5 | 6.58% |
| Not useful | 0 | 0% |
| Highly not useful | 0 | 0% |
| **Total** | **76** | **100%** |

## 8.9 Location of Using Remote Access Facility

The Table 10 shows that 38.15% (29) of respondents were using remote access facility from outside the library whereas 60.53% (46) of respondents were using the same while staying away from the campus. The study also revealed that 14.47% (11) of users were using remote access facility while they away on academic assignment i.e. conferences, seminars, workshops, etc..

Table 10: Location of Using Remote Access Facility

| Location | Respondents | Percentage |
|---|---|---|
| Outside the library | 29 | 38.15% |
| Staying away from the campus | 46 | 60.53% |
| Out of station | 14 | 18.42% |
| On academic assignment (conferences, seminars/workshops) | 11 | 14.47% |
| Other location | 6 | 7.89% |

*Note: Respondents could tick mark more than one location*

## 8.10 Purpose of Using Remote Access Facility

The study made an attempt to know the purposes of using remote access facility by the users. The Fig. 4 shows that majority of the respondents were using remote access facility for teaching purpose (59.4%) followed by making conference papers (55.1%) and seminar purpose (53.6%).
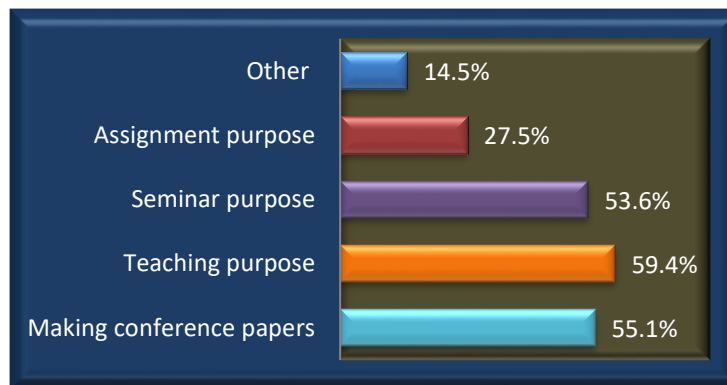


Fig. 4: Purpose of using Remote Access Facility
*Note:     Respondents could tick mark more than one purpose*

## 8.11 Problems Faced while Accessing E-resources through Remote Access Facility

The respondents were asked to state the problems faced by them while accessing e-resources remotely. The results were given in Table 11. The majority of users (63.15%) were not facing any problem while accessing e-resources through remote access facility whereas 36.84% (28) of the users have mentioned that they are facing problems while accessing e-resources through remote access facility.

Table 11: Problems Faced while Accessing E-resources remotely

| Problems | Respondents | Percentage |
|---|---|---|

| | | |
|---|---|---|
| Yes | 28 | 36.84% |
| No | 48 | 63.15% |
| **Total** | **76** | **100%** |

The study asked the users to reveal what type of problems they are facing while using the remote access facility. Users have commented that they are facing different problems while accessing e-resources remotely (Table 12). Full text not downloading was the major problem faced by 12 users followed by access authentication and network problems by 8 users. Seven users disclosed in the study that e-books, e-journals, and e-databases are unable to access through remote access facility.

Table 12: Types of Problems Facing while Accessing E-resources

| Types of Problems | Respondents |
|---|---|
| Library website not opening | 3 |
| E-books, E-journals, Databases not opening | 7 |
| Full text not downloading | 12 |
| Access authentication problem | 8 |
| Facing network problem | 8 |
| Other | 5 |

*Note:* *Respondents could tick mark more than one problems*

## 8.12 Use of Subscribed e-Resources of the Library using Remote Access Facility

Table 13 shows that the users were using remote access facility to access various types of library e-resources. The majority of the users (71.05%) were using remote access facility for accessing e-journals, followed by 56.58% (43) and 32.89% (25) of users using the same for accessing online databases and e-books respectively. It is also observed from the study that 14.47% of users are using remote access facility to access bibliographical databases.

Table 13: Use of Subscribed e-Resources of the Library

| Use of Resources | Respondents | Percentage |
|---|---|---|
| Online databases | 43 | 56.58% |
| E-journals | 54 | 71.05% |
| E-books | 25 | 32.89% |
| Bibliographical databases | 11 | 14.47% |
| EPAC | 9 | 11.84% |
| Other | 2 | 2.63% |

*Note:* *Respondents could tick mark more than one resources*

## 9. FINDINGS OF THE STUDY

The major findings of the study are listed out below:

- The study has observed that majority of users were using remote access facility for more than one year.
- From the study, it is understood that 88.5% of users are highly satisfied or satisfied with remote access facility provided at the KMC Health Sciences Library.

- It was found that majority of the users (59.21%) are rating that remote access facility is highly useful.
- The study reveals that 60.53% of users are using remote access facility while they are staying away from the campus. The study further investigated that 14.47% of users are using remote access facility while on academic assignments (conferences, seminars, and workshops).
- It can be noted from the study that majority of the users (59.4%) are using remote access facility for their teaching purpose followed by making conference papers (55.1%) and seminar purpose (53.6%).
- It has been seen in the study that 36.84% of users (28) are facing problems while accessing e-resources through remote access facility. The study further observed that full text is not downloading/opening, access authentication problem, network problem are major difficulties faced by the users while they are accessing e-resources through remote access facility provided by the library.
- As per the findings of the study, the majority of the users, i.e.,.71.05% are using remote access facility for accessing e-journals, and 56.58% of the users are using the same for accessing online databases.

## 10. CONCLUSION

The present study put forward some suggestions to improve the remote access facility of KMC Health Sciences Library. The remote login access to e-resources is the best practice of libraries because it offers an opportunity for the best use of the electronic information resources and provides easy access to multiple resources subscribed by the library through its interface from anywhere. From the findings of the study, it is observed that there is a strong demand for seamless access (without interruption) to e-resources subscribed by the library through remote access facility provided by the library. This study also understands the need to resolve the access problem while downloading the full-text articles from the online databases, e-journals, etc. remotely. This further calls for a solution to authentication problems while accessing e-resources remotely. It is, however, commendable that KMC Health Sciences Library users are enjoying the remote access facility provided by the library. Most of the users felt that it is an excellent facility and helpful for them as they could access the resources of a library anywhere on 24 hours in a day, 7 days in a week and 365 days in a year.

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